

In the Claims:

Without prejudice or surrender of any subject matter, please amend the Claims as follows:

1. (Currently Amended) A modular wide-range microwave communications unit comprising:  
a precalibrated IF module having IF circuitry and an IF module memory operable for storing calibration values for the IF circuitry; and  
at least one precalibrated RF module having RF circuitry and an RF module memory operable for storing RF-calibration values for the RF circuitry.
2. (Currently Amended) The modular wide-range microwave communications unit of claim 1, wherein the at least one precalibrated RF module ~~comprising~~includes an RF transmit module with the RF circuitry therein including RF transmit circuitry and wherein the RF module memory includes an RF transmit module memory operable for storing RF transmit calibration values for the RF transmit circuitry.
3. (Currently Amended) The modular wide-range microwave communications unit of claim 1, wherein the at least one precalibrated RF module ~~is~~includes an RF receive module ~~comprising an~~ with the RF circuitry therein including RF receive circuitry and wherein the RF module memory includes an RF receive module memory operable for storing RF receive calibration values for the RF receive circuitry.
4. (Currently Amended) The modular wide-range microwave communications unit of claim 1, wherein the precalibrated IF module further comprises IF transmit circuitry ~~comprising plural with a plurality of~~ IF transmit ~~attenuators~~attenuators, IF receive circuitry ~~comprising plural with a plurality of~~ IF receive ~~attenuators~~attenuators, an IF-module memory, and a processor and instructions, the processor being operably configured to execute the instructions during operation of the communications unit, being operably coupled to the IF module memory and RF module memory ~~adapted to~~, the instructions comprising transmit

~~instructions for controlling control~~ the IF transmit circuitry based on IF transmit calibration values ~~for such circuitry~~ stored in the IF module memory and ~~controlling to control~~ the IF receive circuitry based on IF ~~receive~~ calibration values ~~for such circuitry~~ stored in the ~~IF~~ module memory.

5. (Currently Amended) The modular wide-range microwave communications unit of claim 1, further comprising a radio processing unit which ~~comprises~~ includes the precalibrated IF module, and ~~the at least one~~ precalibrated RF module, and a signal processing unit ~~having with a modem, the signal processing unit that~~ is operably coupled to the radio processing unit.

6. (Currently Amended) A ~~microwave~~ communications system, comprising:  
a wireless communication link;  
a wireline network; and  
a plurality of modular wide-range microwave communications units of claim 5, wherein each the plurality including a radio processing unit which is operably coupled to another one or more of the radio processing units via the wireless communications links link to the other radio processing units; and has a plural signal processing units are operably coupled to another one of the signal processing units via a the wireline network,  
wherein each radio processing unit includes a precalibrated IF module and a precalibrated RF module, the precalibrated IF module having IF circuitry and an IF module memory operable for storing calibration values for the IF circuitry and the precalibrated RF module having RF circuitry and an RF module memory operable for storing calibration values for the RF circuitry.

7. (Currently Amended) A modular wide-range microwave communications unit comprising a plurality of precalibrated modules at least one of which being a precalibrated RF module, each of the plurality of precalibrated modules having a module memory operable for storing calibration values for configuration and operation of circuitry within such precalibrated module, wherein the module memory of the precalibrated RF module is operable for storing calibration values for RF circuitry within the precalibrated RF module at least one of the group of IF transmit IF circuitry, RF transmit RF circuitry, receive IF circuitry, and receive RF transmit calibration values for the RF transmit circuitry.

8. (Currently Amended) The modular wide-range microwave communications ~~communication~~ unit of claim 7, wherein ~~a first in the plurality of~~ precalibrated modules the precalibrated RF module, ~~comprises and includes an RF transmit module comprising in which the RF circuitry includes~~ RF transmit circuitry and ~~wherein the module memory in the precalibrated RF module includes~~ an RF transmit module memory operable for storing RF ~~transmit~~-calibration values for the RF transmit circuitry.

9. (Currently Amended) The modular wide-range microwave communications ~~unit~~ precalibrated RF module of claim 8, wherein the RF transmit circuitry comprises an attenuator, an IF detector and an RF detector, and ~~wherein the calibration values stored in the RF transmit module memory is operable for storing~~ include calibration values for the attenuator and ~~the~~ IF and RF detectors.

10. (Currently Amended) The modular wide-range microwave communications unit of claim 7, wherein ~~one of in the plurality of~~ precalibrated modules ~~is the~~ precalibrated RF module ~~includes an RF receive module comprising an in which the RF circuitry includes~~ RF receive circuitry and ~~wherein the module memory in the precalibrated RF module includes an RF receive module memory operable for storing RF receive-calibration values of for the RF receive circuitry.~~

11. (Currently Amended) The modular wide-range microwave communications ~~unit~~ RF receive module of claim 10, wherein the RF receive circuitry comprises an attenuator and ~~wherein the calibration values stored in the RF receive module memory is operable for storing~~ include calibration values for the attenuator.

12. (Currently Amended) The modular wide-range microwave communications unit of claim 7, wherein ~~one of the plurality of~~ precalibrated modules ~~is further includes a~~ precalibrated an IF module comprising IF transmit circuitry, ~~and~~ IF receive circuitry ~~and a processor, wherein the module memory in the precalibrated IF module includes an IF module memory, and wherein the processor is and instructions, the processor being~~ operably configured

to execute the instructions and be operably coupled to each module memory, the instructions comprising transmit instructions for controlling control the IF transmit circuitry and receive instructions for controlling the IF receive circuitry based on IF transmit calibration values and IF receive calibration values stored in the IF module memory.

13. (Currently Amended) The modular wide-range microwave communications unit of claim 12, wherein in the plurality of precalibrated modules further comprise the precalibrated RF module includes an RF transmit module having an RF transmit circuitry portion of the RF circuitry and an RF receive module having an RF receive circuitry portion of the RF circuitry, the RF transmit module comprising RF transmit circuitry including an attenuator, and IF detector and an RF detector, wherein the module memory in the precalibrated RF module includes and an RF transmit module memory operable for storing RF transmit calibration values for the RF transmit circuitry portion, and the RF receive module comprising RF receive circuitry including a first receive attenuator and an RF receive module memory operable for storing RF receive calibration values for the RF receive circuitry portion first receive attenuator.

14. (Currently Amended) The modular wide-range microwave communications unit of claim 13, wherein the plurality of precalibrated modules further includes a precalibrated IF module that includes IF transmit circuitry comprises with a first digital attenuator operatively coupled to a first analog attenuator, a first mixer operatively coupled to the first analog attenuator, a second analog attenuator coupled to the first mixer, a second digital attenuator coupled to the second analog attenuator, and a transmit IF AGC coupled between the first digital and first analog attenuators, and wherein the module memory in the precalibrated IF module is operable to store calibration values instructions are operable for controlling attenuation by the attenuators of the IF transmit circuitry and RF transmit circuitry based on the IF and RF transmit calibration values.

15. (Currently Amended) The modular wide-range microwave communications unit of claim 13, wherein the plurality of precalibrated modules further includes a precalibrated IF module that includes IF receive circuitry comprises with a receive RSSI detector, a plurality of receive attenuators, a mixer, a further attenuator and a receive AGC detector operably coupled in

a manner where the receive RSSI detector is operably coupled to the plurality of plural receive attenuators, the plurality of receive attenuators are operably coupled to a second mixer, the second mixer is operably coupled to a further attenuator, and the further attenuator is operably coupled to the receive AGC detector, and wherein the module memory in the precalibrated IF module is operable to store calibration values instructions are operable for controlling attenuation by the plurality of receive attenuators and further attenuator of the IF receive circuitry and RF receive circuitry based on the IF and RF receive calibration values.

16. (Currently Amended) The modular wide-range microwave communications unit of claim 10, further comprising:

a radio processing unit which comprises includes the plurality of precalibrated modules one of which being a precalibrated IF module and another being the precalibrated RF module; and

a signal processing unit having a modem, the signal processing unit being and operably coupled to the radio processing unit.

17. (Currently Amended) A modular wide-range microwave communications system comprising:

a wireless communication link;

a wireline network; and

a plurality of modular wide-range microwave communication units each including a radio processing unit which is operably coupled to another one or more of the radio processing units via the wireless communication link and has a signal processing unit operably coupled to another one of the signal processing units via the wireline network.

wherein each radio processing unit further includes a plurality of precalibrated modules at least one of which being a precalibrated RF module, each of the plurality of precalibrated modules having a module memory operable for storing calibration values for configuration and operation of circuitry within such precalibrated module, wherein the module memory of the precalibrated RF module is operable for storing calibration values for RF circuitry within the precalibrated RF module. A microwave communications system, comprising plural communications units of claim 16, wherein plural radio processing units are operably coupled

via wireless communications links to other radio processing units, and plural signal process units are operably coupled via a wireline network.

18 - 28. (Withdrawn)

29. (Currently Amended) The modular wide-range microwave communications system of claim 13, wherein the plurality of precalibrated modules further include aA precalibrated IF module having operable in a modular wide-range microwave transceiver, the precalibrated IF module comprising:

transmit IF circuitry, and

receive IF circuitry, and

an IF module memory for storing IF calibration values for the transmit and receive IF circuitry, and

a processor and instructions, the processor being operably configured to execute the instructions and coupled to the IF module memory, and a RF transmit module memory and RF receive module memory, the instructions comprising including: transmit instructions for controlling the transmit IF circuitry and circuitry of the RF transmit module circuitry portion based on the IF calibration values and RF transmit calibration values for the RF transmit circuitry portion, and receive instructions for controlling the receive IF circuitry and circuitry of the RF receive module circuitry portion based on the IF calibration values.

30. (Currently Amended) A precalibrated RF module operable in a modular wide-range microwave transceiver, the precalsibrated RF module comprising one of the group of: one or both of

a precalibrated RF (radio frequency) transmit module having an RF transmit module memory for storing RF transmit calibration values for circuitry of the precalibrated RF transmit module, wherein the precalibrated RF transmit module is operable together with configured to operatively interact with a precalibrated transmit IF module having transmit IF circuitry, a transmit IF module memory for storing transmit IF calibration values and a transmit processor and instructions, the processor being operably configured to execute the instructions when coupled to the transmit IF module memory and RF transmit module memory, the

~~instructions comprising transmit instructions for controlling control~~ the transmit IF circuitry and circuitry of the ~~precalibrated~~ RF transmit module based on ~~the transmit IF~~ calibration values and ~~on RF~~ transmit calibration values; and

a precalibrated RF receive module having an RF receive module memory for storing RF receive calibration values for circuitry of the RF receive module, wherein the ~~precalibrated~~ RF receive module is ~~operable together with~~ configured to ~~operatively interact with~~ a precalibrated receive IF module having receive IF circuitry, an receive IF module memory for storing receive IF calibration values for the receive IF circuitry, and a receive processor ~~and instructions, the receive processor being operably configured to execute the instructions when~~ coupled to the receive IF module memory and RF receive module memory, the instructions ~~comprising receive instructions for controlling control~~ the receive IF circuitry and circuitry of the RF receive module based on the receive IF calibration values and RF receive calibration values.

31. (Currently Amended) ~~A The modular wide-range wireless communications unit of claim 30, further-microwave receiver~~ comprising:

~~the precalibrated RF transmit module of claim 30;~~

~~the precalibrated RF receive module of claim 30; and~~

~~a precalibrated IF module comprising memory for holding IF transmit calibration values, the precalibrated transmit IF module and the precalibrated receive RF-IF module, wherein an IF module memory forms both the transmit IF module memory and the receive IF module memories, and an IF module processor forms both the transmit processor and the receive processorsprocessor.~~

32. (New) A modular wide-range wireless communications unit, comprising:

an IF/radio processing card (IF/RPC) module including precalibrated IF transmit circuitry, precalibrated IF receive circuitry, a telemetry circuit, a memory for holding calibration values associated with the IF transmit and receive circuitries, a processor adapted to control respective configuration and operations of the IF receive and transmit circuitries based on their associated calibration values and based on control signaling received via the telemetry circuit;

a transmitter module operatively coupled to the IF/PRC module from which it receives IF

transmit signals, the transmit module including precalibrated RF transmit circuitry for converting IF to RF transmit signals;

a transmit memory for holding calibration values associated with the transmitter module;

a receiver module operatively coupled to the IF/RPC module to which it sends IF receive signals, the receiver module including precalibrated RF receive circuitry for converting RF to IF receive signals;

a receive memory for holding calibration values associated with the receiver module; and

an antenna coupling module operatively interfaced with the transmitter and receive modules.

33. (New) The modular wide-range wireless communications unit of claim 32, further comprising a power amplifier module interposed between the antenna coupling module and the transmitter module.

34. (New) The modular wide-range wireless communications unit of claim 32, further comprising a synthesizer module operatively coupled to the IF/RPC module.

35. (New) The modular wide-range wireless communications unit of claim 32, wherein the transmitter module includes a monolithic microwave transmitter IC.

36. (New) The modular wide-range wireless communications unit of claim 32, wherein the receiver module includes a monolithic microwave receiver IC.

37. (New) The modular wide-range wireless communications unit of claim 32, wherein, together, the IF/RPC and transmitter module form a transmit path and, together, the receiver module and IF/RPC form a receive path, and wherein the control signaling received via the telemetry circuit includes commands from a remote signal processor unit to adjust frequency and modulation settings within transmit and receive paths, respectively.

38. (New) The modular wide-range wireless communications unit of claim 32, wherein the memory of the IF/RPC module and the transmit memory include calibration tables



for the calibration values including transmit power attenuation values.

39. (New) The modular wide-range wireless communications unit of claim 38, wherein the transmit power attenuation values correlate to modulation settings and temperature values.

40. (New) The modular wide-range wireless communications unit of claim 38, wherein each of the IF and RF transmit circuitries includes one or more attenuators controllable by the transmit power attenuation values.

41. (New) The modular wide-range wireless communications unit of claim 32, wherein each of the IF and RF receive circuitries includes one or more attenuators activation and control of which is controllable by the calibration values contained in the memory of the IF/RF and receive memory.